**Memorandum**

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## **Title:** **Anxiet-ease**

##### **A key to a healthier mind. A step towards a happier tomorrow.**

## **Executive Summary:**

With the advent of the Covid-19 pandemic, people across the globe have had to adapt to extraordinary amounts of stress coupled with their usual lives. Continuous meetings clog up their calendars and brief periods of breaks are interluded with media based pressure. Anxiet-ease aims to lend users a helping hand, by being a one stop application designed to contain all your needs to calm down. Simply sign up and link your google calendar and let us know when you're anxious to use our novel collection of relaxing measures. Our Machine-Learning algorithms predict future instances of anxiety attacks and preemptively provide you with the relaxation you need to get through the day.

## **Introduction:**

The COVID-19 pandemic has disrupted our usual ways of living and has definitely impacted the mental health of many. The continuous waves of the pandemic leave several people uncertain of the future and anxious.

* A survey in 2020 revealed that 62% of respondents reported experiencing some degree of anxiety. (SingleCare, 2020)
* An estimated 31% of all adults will experience an anxiety disorder at some point in their life. (Anxiety and Depression Association of America, 2020)
* Specific phobias are the most commonly occurring anxiety disorder, affecting more than 19 million adults in the U.S. (ADAA, 2020)

Anxiet-ease is a one-step application which aims to help people with anxiety disorders calm down. By simply signing-up and linking your Google calendar, you get access to our resources of relaxation methods. Our application helps you track your encounters with anxiety and the Machine-Learning algorithm helps predict future anxiety attacks.

Anxiety results in people feeling nervous or tense , restless, panic-stricken and affects their quality of life in general. The application provides you with several relaxation methods that help you get through the day.

Sources:

<https://edition.cnn.com/videos/world/2021/04/23/india-covid-19-coronavirus-record-coren-pkg-intl-hnk-vpx.cnn>

[https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.usatoday.com%2Fstory%2Fnews%2Fworld%2F2021%2F04%2F20%2Findia-covid-cases-surge-hospitals-run-out-oxygen-beds%2F7300161002%2F&psig=AOvVaw0V1lFz32Eu-6CSJTuyJKCt&ust=1619434016878000&source=images&cd=vfe&ved=0CAQQjB1qFwoTCPCAyICcmfACFQAAAAAdAAAAABAV](https://www.usatoday.com/story/news/world/2021/04/20/india-covid-cases-surge-hospitals-run-out-oxygen-beds/7300161002/)

<https://www.singlecare.com/blog/news/anxiety-statistics/>

<https://www.medicalnewstoday.com/articles/322510#symptoms>

## **Solutions:**

According to the National Institutes of Health, nearly [1 in 3](https://www.nimh.nih.gov/health/statistics/any-anxiety-disorder.shtml#part_155096)  of all adolescents ages 13 to 18 will experience an anxiety disorder. These numbers have been rising steadily; between 2007 and 2012, anxiety disorders in children and teens [went up by 20%](https://www.childhealthdata.org/learn-about-the-nsch/NSCH).

Our application provides easy access to resources that can help ease your anxiety. Our resources include anxiety easing activities like yoga and meditation, various exercises, different cooking recipes as well as calming music. We have also provided a steady flow of animal pictures using the unsplash API, so that the user never runs out of animal pictures. The app also takes into account the user's preferences and suggests the most effective calming techniques based on previous anxiety attacks.

Apart from this, we have also provided a calendar for the users to get monthly, weekly and even a daily view on when the anxiety attacks are most likely to happen. This also helps the user to track their progress and be better prepared.

**Objectives of Anxiet-ease:**

1. We give people, who are under mental duress, a collection of methods to calm down and relax.
2. We predict possible future attacks and preemptively provide them with calming techniques when they most need it.
3. On top of that, users can also look at relevant data on when they are most anxious, what techniques best help them calm down and even add their own techniques of calming down to our collection so as to preserve the identity of the app as a one-stop application for easing your anxiety.

### **Technical Aspect**:

We have a website, hosted on heroku and designed on figma, which includes a profile section, calendar (with monthly and weekly views) and a page with all the activities. We take user-based data and link it to a colab notebook acting as a backend which uses time of attack and the delta change of how the user feels before and after the attack to predict the next possible attack. This data is then displayed on the calendar. We have an IOS application which includes all these features along with google sign in to link your google calendar so as to provide further data for the model to work with.

## **Possible Improvements:**

1. The next step for the app would be to fully automate the entirety of the process by connecting all the separate entities to establish a unidimensional workflow all the way from the website inputs to the calendar.
2. Another major improvement which we regard as highly important is developing an ML network which takes in the other data from the user such as smart watch position, heart-rate etc to provide more accurate estimates of when to expect an attack. This would be in the form of a classifier with a softmax output to give weights to each option. We would also consider how much better the user feels and link that with the activity used to calm. This would greatly improve the efficacy of the system as a whole and have a considerable impact on the final application. However, given that the crisis exists in the now, there is a great need for urgent deployment of this application even in its crudest form with the basic learning algorithms.

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## **Conclusion:**

As university students, our group understands the magnitude of the problem that is anxiety. Our days are filled with meetings. Sitting in our rooms all day, attending classes and pursuing extracurriculars while being unable to socialize or access support structures has left us all in dire need of mental relaxation. Anxiety attacks are normalized as a daily activity from which we are forced to move on and get on with our work. The need for relaxation is not exclusive to students alone. Teachers, parents, workers, the unemployed populous are all groups in need of daily mental relaxation. Anxiet-ease is uniquely equipped to provide these disaffected groups with what they need.

With individual pressure and stress at an all time high, people need an easy way to calm down and relieve their anxiety. Our application provides that and promises more in the future.